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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,880	11/04/2003	Kenichi Machida	024536-0133	3501
22428	7590	04/01/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			RIDDLE, KYLE M	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary

Application No.

10/699,880

Applicant(s)

MACHIDA, KENICHI

Examiner

Kyle M. Riddle

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11042003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4-7, 10, 11, 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai et al. (U.S. Patent 6,553,964).

Arai et al. disclose a valve timing method comprising:

- an intake side variable valve electromagnetic driver EMD 34 for controlling intake valve 32 (column 5, lines 30-46);
- an operating condition detecting means comprising sensors including air flow meter 46, throttle sensor 48, accelerator position sensor 52, and crankshaft sensor or engine speed sensor 54 sending signals to control unit C/U 14 (column 3, lines 64-67 with column 4, lines 1-10);
- the C/U 14 having a processor MPU 106 to output signals to the intake side EMD 86 (column 4, lines 60-67 with column 5, lines 1-11);
- wherein C/U 14 determines a target intake air based on accelerator position and engine speed (column 5, lines 51-54), and controls valve timing using retrieved and current input values (column 6, lines 39-46, lines 61-64) by making a response adjustment S154 (column 8, lines 8-13 and Figure 13).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. in view of Aoyama et al. (U.S. Patent 6,769,404).

Arai et al. disclose a valve timing method comprising an intake side variable valve electromagnetic driver for controlling intake valve, an operating condition detecting means comprising sensors including various sending signals to a control unit, the control unit having a processor to output signals to the intake side EMD, wherein the control unit determines a target intake air based on accelerator position and engine speed, and controls valve timing using retrieved and current input values by making a response adjustment. They, however, fail to disclose specifically the cited variable valve control apparatus.

Aoyama et al. teach a continuously variable lift and working-angle control mechanism 1 (column 6, line 12) with a drive shaft 6 driven by an engine crankshaft 29 via a timing chain or belt (column 6, lines 28-29), a first eccentric cam 7 fixed to drive shaft 6, a control shaft 8 having a second eccentric cam 9 oscillatingly supporting a rocker arm 10 that is connected through link arm 13 to first eccentric cam 7, a rockable cam 12 connected through link member 14 to rocker arm 10 for abutting engagement of valve lifter 11 and intake valve 4 (column 6, lines 15-27), a hydraulic actuator 16 for controlling the rotation of control shaft 8 (column 6, lines 65-67 with column 7, lines 1-5), the rotation of control shaft 8 varying the relative positions of the shafts,

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cams, links, and arms to continuously vary the lift and working-angle of the intake valve (column 7, lines 15-26). It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Aoyama et al. in the valve timing method of Arai et al., since the use thereof would have provided a valve operating system that controls through a response adjustment based on engine speed and target intake air both valve lift and timing.

Allowable Subject Matter

5. Claims 2, 3, 12, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The IDS (PTO-1449) filed on 4 November 2003 has been considered. An initialized copy is attached hereto.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 3 patents.

- Kawasaki et al. (U.S. Patent 6,513,494) disclose a variably operated intake valve with two control modes using intake air amount and engine speed.

- Aoyama et al. (U.S. Patent 6,647,935) disclose a variable valve timing and lift mechanism with a rockable cam.

- Burkhard et al. (U.S. Patent 6,863,048) disclose a variable valve lift system with feedback for valve control.

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Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (571) 272-4864. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kyle M. Riddle
Examiner
Art Unit 3748

kmr



THOMAS DENION
SUPERVISORY PATENT EXAMINER
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